

18. (Amended) The process of Claim 17 wherein the layer silicate comprises a smectite clay.

19. (Amended) The process of Claim 17 wherein the layer silicate comprises a montmorillonite clay.

20. (Amended) The process of Claim 17 wherein the layer silicate comprises a palygorskite clay.

21. (Amended) The process of Claim 20 wherein the layer silicate further comprises a palygorskite clay.

22. (Amended) The process of Claim 23 wherein the sulfur-oxidizing bacteria comprises Thiobacillus thiooxidans.

23. (Amended) The process of Claim 24 wherein the iron-oxidizing bacteria comprises Thiobacillus ferrooxidans.

24. (Amended) The process of Claim 27 wherein the citric acid-producing microorganism comprises Aspergillus niger.

25. (Amended) The process of Claim 17 wherein the layer silicate is in the form of raw clay and wherein the process further comprises breaking up the raw clay into clumps with a size from about 0.5 cm to about 5 cm prior to treating the layer silicate.

26. (Amended) The process of Claim 17 further comprising adding the acid-producing microorganisms to an inoculant material prior to treating the layer silicate with the microorganisms which have been added to the inoculant material.

27. (Amended) The process of Claim 30 wherein the population of the microorganisms added to the layer silicate is from about 10

to about 10⁶ bacteria/g of the inoculant material.

32. (Amended) The process of Claim 17 further comprising maintaining the temperature of the layer silicate during treating within the range from about 20 to about 35°C.

33. (Amended) The process of Claim 17 further comprising maintaining the water content of the layer silicate during treating within a range from about 15 percent by weight to about 70 percent by weight.

34. (Amended) The process of Claim 30 wherein the inoculant material added to the layer silicate comprises about 5 to about 20 percent of the overall composition after the inoculant material has been added.

35. (Amended) The process of Claim 17 further comprising mixing and aerating the layer silicate while it is being treated with the acid-producing microorganism.

36. (Amended) The process of Claim 35 wherein the treating process occurs for a period of time from about 1 to about 365 days.

37. (Amended) The process of Claim 17 further comprising adding nutrients for the microorganisms to the layer silicate prior to treating with the acid-producing microorganisms.

39. (Amended) The process of Claim 17 further comprising adding small quantities of a dilute acid to the layer silicate prior to treating with the acid-producing microorganisms.